

Integrating e-Learning in all English Classes: Success at the half-way point of a five-year project

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As more and more schools of higher learning in Japan are being pushed to introduce e-Learning programs, three fundamental barriers have been discovered, namely, funding, staffing and infrastructure. This paper reports on a successful endeavor to implement across its English curriculum a self-study based e-Learning program in the College of Science and Engineering at a private university in Tokyo. This paper traces the program from its conception to implementation, including the transformations it has taken on. The remaining two years of the study will provide researchers with more insight as to how to make even further improvements.

According to the article "e-Learning: Making Inroads into Nation's Colleges" from the May 7, 2007 issue of the Japan Times, over 40 percent of Japanese universities employ e-Learning in one form or another. According to the study conducted in 2005 by the National Institute of Multimedia Education, 41.4 percent of the private institutions surveyed have offered e-learning classes while 69.3 percent of the national universities responding offered e-learning programs. In total, 36.3 percent of the universities surveyed have offered e-learning classes (Ozkul & Aoki, 2006). However, a further glance at the aforementioned National Institute of Multimedia Education's study sheds light on why universities have not turned to e-Learning. When asked why they did not implement e-Learning, these universities (60% in the study) answered "a lack of budget," "a lack of personnel to provide technical support," and "a lack of infrastructure," as the main reasons. We shall return to these issues below.

Current Roles of e-Learning Software in English Education at Japanese Universities

There are advocates of customized self-made software who often employ a blended or hybrid learning/delivery style in which case technology is used as an extension of the lesson so that it enables students to preview and review material or complete assignments. Some even go as far as stating that CALL will only survive with blended teaching (Brown, 2005). However, coming up with one's own in-house or self-produced e-Learning curriculum costs one much time and no doubt much money and requires an intricate understanding of technology. So a simpler solution would be commercially produced software. Although expensive, data provided by major distributors of commercial English education software in Japan—ALC (according to manufacturer: purchased or leased by over 160 universities), DynEd (user data not available) and Seibido (according to manufacturer: purchased or leased by over 80 universities)—indicate that many universities have purchased such products.

From the introduction it is known that cost is the most crucial consideration when considering the implementation of any technology on a large scale. But even if funds are available there are other considerations. Most of the purchasing decisions are made by individuals and other personnel without much consideration of user comments or much knowledge of e-Learning (Reinders & Lewis, 2005). Therefore, it is not uncommon to hear of purchased or leased software that are underused or even never used for years. In the authors' three years of research in use of commercial software in Japan, we have come across only one study (Brown *et al.*, 2007).

We therefore reason that many institutions go to great lengths to research the kinds of software available but once purchased or leased, leave it up to individual instructors to get it out of the box and into the classroom. In addition, although much time is spent in considering the kind of software to incorporate, very little time and effort are spent considering its relationship with the curriculum. The simplest solution is to designate the software for self-study. One of the advantages of technology is the capability to move learning out of the classroom and into students' everyday lives (Nishigaki & Chujo, 2005). Still, even if the purchased or leased e-Learning software is used as self-study materials, a delivery method to get it into the students' hands is required. This harkens back to what universities that have not implemented e-Learning said above, personnel and infrastructure are necessary.

With all of this in mind, what follows is the record of the steps taken over the last three years in an effort to incorporate an e-Learning component in the curriculum of all English classes in the College of Science and Engineering of Aoyama Gakuin University. We will conclude by considering the next steps to take in the two remaining years of the study.

Inception Year 2004

During the summer of 2004, the six full-timers in charge of English instruction in the College of Science and Engineering at Aoyama Gakuin University were informed that the college had substantial funds to be allocated to either leasing or purchasing commercial software for the exclusive use of the students in their college. The college asked the full-time English instructors to devise an effective plan to create a successful e-learning environment.

This task required extensive study re the software that the department chair had recommended (the university had been studying e-Learning programs for some time unbeknownst to the instructors). Each instructor had to go through—actually use—each of the software components being considered (see Appendix I for the list of software purchased and/or leased). This entailed visiting the company on numerous occasions and sitting through several hours of training. In the end the following decisions were made.

Firstly, the English instructors decided to lease software, because students would have access to more courses due to the lower leasing costs. Also featuring in this decision was the feeling that it was still premature to make a long-term commitment to any kind of commercial software.

The second decision was based on the claim that learning English cannot be accomplished in 90-minute classes per week, requiring a substantial amount of out of class self-study (Brown, 2005). Also, because teachers often comment that outside the classroom students are much more able to perform than inside (Gray & Leathers, 1999), it was decided to utilize the e-Learning component as self-study material. Another factor was that in language learning, self-study is critical (Oteki, 2003) and that providing secure environments are equally essential (Aoki, 1999). The instructors felt that the self-study environment would provide that security. Finally, the consensus was that having instructors give up class time to go to the lab to act as supervisors was inefficient use of resources. Also factoring into this decision was the instructors' reluctance to lose contact teaching time with the students.

Pairings

One fundamental decision was to match one or several kinds of e-Learning courseware with the current English courses in the curriculum. The name given to this matching was "pairing." Pairing was conceived as a way to supplement the lacking components in the one-skill orientated classes in the curriculum. Thus the idea of mundane matches (i.e. matching listening classes with listening software or reading classes with reading software) could be avoided. Instead, the one-skill oriented classes were matched with courseware focusing on other skills, which, it was hoped, would result in a more holistic English language experience for the students (see Appendix Ib for pairing for the first year).

Unlike hybrid or blended teaching, pairing would enable the instructors to concentrate on classroom teaching while encouraging the students to access and study the e-Learning courseware due its effect on the students' final course marks. The students' progress could be measured in terms of extra credit or as a requirement that constitutes a certain percentage of the final mark. In essence, the e-Learning component is self-study material that is evaluated as part of the students' English class marks.

Staffing and hardware concerns

As the instructors became more familiar with the software, it was time to orient staff members who would assist the software house in installing the software on designated computers on the Sagamihiro campus, where all College of Science and Engineering classes are held. These staff members also would be responsible for aiding students in registering for

course and accessing the software on campus, but also from home (as was the case many times). These staff members assumed these new duties on top of their already long list of chores.

The department chairman was instrumental in reserving computers in several computer labs on campus. The amount of red tape involved in this matter is unknown, but it is imagined that getting priority for the department's students was not an easy matter to accomplish.

Academic Year 2005

Once the software was installed and all training completed it was time for the new academic year, 2005. When beginning the implementation process, the English instructors faced another set of challenges.

The first challenge was to find a number of students who would serve a test group. It was decided that the best way to find a group would be for to ask for volunteers, thinking it would raise motivation levels among the participants. Second, the volunteers, once "signed up," would have to be registered, and all other students restricted from using the computers running the software during the times allotted to the volunteers in a number of computer labs on campus. Volunteers required orientation on how to access the courseware on their home computers. They also received instruction on the pairings in orientation sessions. It was expected that the students would complete 32 units in the allotted time, from mid June until December. Volunteers were instructed to complete an equal number of lessons from the four courseware for a balance of skills practiced but also for later evaluation purposes. It was expected that the volunteers would spend 45-60 minutes a week on the e-learning component.

After promoting the availability of the e-Learning program 343 out of 1463 students enrolled in the six full time instructors' classes volunteered to take part in the first year trial. It cannot be assumed that 343 actually agreed to participate because some students were enrolled in more than one class (see Appendixes 2a, 2b and 2c for details).

Results and conclusions drawn

At the end of the academic year access logs were compiled as a means of accessing the results of the experiment. The results (see Appendix 3) were more than disappointing. Of the 343 students there were 489 times students accessed the material. The number of students who logged on for more than three months totaled 43. The number of students who worked consistently for the full six-month period numbered 12. Please note that this number does not mean 12 students, by crosschecking all records it was later determined that the work was the result of five students

The fault behind this failure cannot be determined, but there are some possible reasons.

One, the instructors behind this study lacked the confidence and technical skill to implement a successful program. Oftentimes the instructors were at a loss as what to do when problems arose. The students needed guidance that was not always forthcoming. Also, the instructors did little to re-enforce the importance of the program with the volunteers.

Little mention was made in many of the classes of the program once it had begun. Possibly, the instructors had not thought out carefully the implementation of the project; a crucial mistake was overlooking the need for some reward for the volunteers. The instructors naively assumed that the volunteers would recognize this as a chance to improve their language skills.

Second, there were technical issues that hampered the volunteers in using the software, at home and from on-campus. The problems accessing the courseware from home were related to the kind of Internet services the students had. Students with a slow dial-up service could not access the ALC system. This problem could not be overcome. Apple computer users also were unable to access the system.

On campus access was limited to three computer labs; classes scheduled in these labs took precedence over self-study. There were many times when all three labs were booked with classes, thus severely limiting volunteers' access time.

Finally, a cause for failure could rest with the students. While no definitive study of motivation in the study of foreign languages in the field of science exists, some evidence, one such example introduced below, indicates that many students in the field do not enjoy the study of languages.

Academic Year 2006

The English instructors set out to rectify the shortcomings and improve the allure of pairing in e-Learning in the college for 2006. After considering what was laid out in the "seven good principles of good practice in undergraduate education" (Susser, 2005), several major changes were made.

First of these changes had to do with the number of students in the study involved. The program was expanded to include all English classes, meaning the 14 part-time English instructors of the college would be involved in the project as well.

In attempt to address the need for rewards the voluntary self-study aspect was changed to one offering extra credit, which came to be called the Bonus Point System. A student completing the 32 assignments (calling for 45 to 60 minutes of work a week on average) would receive a ten percent increase to his or her class grade. For example, should a student completing the 32 units record a class score of 75, seven and a half points would be added, thus giving the student a score of 82.5, in effect, raising the student's grade from a B to an A. Furthermore, a student failing a class, say scoring 55 (60 is a passing grade), could complete 32 units and thus raise the score to be 60.5. As research points out, students may be interested in the ALC CALL system at the beginning, but the enthusiasm may eventually disappear (Matsubara & Nakamura, 2004). The facilitators felt that the bonus system was the solution to maintain motivation.

Second, the pairings were streamlined to eliminate any overlaps caused by multiple class registrations and to affect a more effective blending. Thus, the courseware was reduced from four to three per English class (see Appendix 3 for pairings). Also, because the number of students using the software was drastically increased, the department, under the leadership of the dean, was able to arrange for more CALL rooms with expanded hours to be set aside for the self-study project (see Appendix 7 for details). This also required technical support.

For incoming freshmen an orientation was scheduled. All other students registered for English classes also were given orientations in which the pairings, access matters and bonus point system were covered. Announcement of the e-Learning program was also posted on the university's web site.

Implementing these changes required more administrative and technical work than that of the previous year. Primarily, part-time instructors had to be briefed on the program in December of 2005, and then undergo training and orientation at the beginning of the 2006 term. Several had to be issued university security ID cards that allow access to the system from computer terminals on campus. In addition to the aforementioned software installation, the computer records for the previous year had to be copied and expunged from the system in order to accept the large number of students registering for the new academic year.

To check mid way through the year how many students were taking advantage of the self-study program for bonus points, the full-time instructors had the part-time instructors submit check sheets filled out by students who were engaged in the project. The full-time instructors checked the administrative records of all students who stated they were on track to receive extra credit. This task was time consuming and complicated since many students were registered in more than one class.

By the end of summer, the dean of the department had announced that there would be additional funding to improve the e-Learning program. Firstly, the ALC program was upgraded to provide a more user-friendly interface for the students and replace the administration function with a more streamlined one. Secondly, an assistant was employed to take charge of the administrator's site and answer questions from the students. The presence of the assistant made it possible for all teachers to focus on their teaching. Staff members who once were inundated with questions from students and instructors alike were able to get back to other work.

At the end of the year, the assistant compiled the results of the e-Learning program for 2006 (see Appendix 4). The 10% bonus system achieved a success rate of approximately 10% across the curriculum. It was concluded that the bonus point motivation factor played an important role in increasing the number of e-Learning users.

As a means to evaluate and enhance the e-Learning program, a questionnaire was administered to the students at the end of the year (see Appendix 5). The questionnaire was written and answered in Japanese. The questionnaire results provided more insight as to how more effectively implement measures guaranteeing more use. Responses indicated that access time on campus was still somewhat limited, and pairings were still considered complicated. Other factors, such as motivation to complete the tasks, were issues to be considered.

Academic Year 2007

In 2007, as a step forward in the pairing method, the College of Science and Engineering sought to increase student motivation as it relates to the e-Learning courseware.

In response to the student responses on the questionnaire, the bonus points awarded for completion of 25 units (reduced from 32) was raised to 20%.

The CALL rooms equipped with ALC courseware were increased to 15 (746 computers), thus allowing much more potential access time. The pairings were reduced to one courseware per class to eliminate any confusion (see Appendix 6).

The assistant was assigned office space in the PC Support Lounge and could work together with staff members to handle student inquiries, thereby offering support from 9:00 am to 5:00 pm five days a week. The assistant also would maintain more detailed and consistent observations of the student access records. On the instructors' part, they would work closely with the assistant to facilitate frequent messaging from the assistant to the students to maintain motivation.

To encourage more student participation, students were allowed to begin their study as late as October. Credit would be given to any student completing 25 units of courseware paired to his or her class.

Discussion

It is evident that by the inclusion of all English classes taught in the College of Science and Engineering, coupled with the more efficient record keeping system administered by a trained assistant rather than by individual instructors will provide an adequate sampling necessary for evaluation of the present courseware used. At this time a more detailed questionnaire is under development; moreover, interview sessions may be implemented for further evaluation purposes.

As another means of evaluating the effects of e-Learning via Pairing, the instructors are currently trying to identify any correlation between pre-test and post-test scores. The CASEC (Computerized Assessment System for English Communication) is administered to a large group of students once in April as a pre-test and once in December as a post-test. It is a test that has been developed as the first CAT (Computer Adaptive Test) applying IRT (Item Response Theory). The results of the correlation studies are scheduled to be available by the end of the academic year 2007.

The college and university have been supportive of all the instructors' efforts from the very beginning. The number of rooms and computers available for this study has been increased yearly (see Appendix 7), without any red tape or complications. The support of various offices and staffs has greatly aided these efforts. The extra funds spent on upgrading the software for the students and the administrative site for record keeping have been a tremendous boon. The hiring of an assistant and her training and placement in a convenient office for student and faculty access has been a great help.

In terms of student motivation, the number of students accessing the material will be available in late December. These numbers are awaited with great anticipation. The responses from last year, found in Appendix 5, indicate that students expected bonus points of more than 10% to keep working (see the response to 10.2 of the questionnaire). Will bonus points worth 20% significantly increase student participation this year? Will the extended time—starting as late as October—have a positive effect?

Some have called for the software to be addressed in classes, perhaps in quiz form. However, from the responses collected last year (see aforementioned section), students seem reluctant to have more quizzes or tests in class.

The future of blending is also called into question. Should there be an integration of software, the course titles would need to be revised as well as the curriculum designs. The final question, perhaps the biggest, would be, "Who would be responsible for this integration across the board?"

Conclusion

To return to the survey mentioned in the introduction, it is indeed difficult for a large-scale e-Learning program to be effectively implemented. Needed are not only funding, but also technical support and an infrastructure to deal with the many complications that do arise. Although not in place from the beginning, these requirements came to be met over a three-year period. Today, a fully functional e-Learning component has been integrated in all classes in the college.

This project has been a learning experience for all involved. In particular, it has led these authors to expand their research areas, and become more involved in the area of CALL. The study, however, benefits the students, present and future of the college. How CALL can be used for distance learning, how mobile devices can be used for instructional purposes, and how student-created podcasts can be used for cross cultural purposes are but a few areas this current research have spawned in the minds of the instructors involved.

The statistics due out later this year will serve as a springboard for more thought. Any feedback or advice from readers is welcomed.

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Appendix I a

ALC software

1. Standard (units on reading, listening and TOEIC)
2. Writing (units on sentence construction and prepositions)
3. Power Words (units on vocabulary of 10 levels)
4. IT English (units on vocabulary in the various sciences)
The university leased two courses as a means to assist students who needed remedial learning. Hence, the following became available for students in every department.
5. Basic (units on reading, listening and TOEIC)
6. Grammar (units on grammar)

Appendix I b

Pairings for the first year

Table I

Class Title	e-Learning Courseware by ALC
Oral Communication 1	Standard Reading IT English Basic Standard Listening IT English Vocabulary
Oral Communication 2	Standard Reading IT English Basic Standard Listening IT English Vocabulary
Reading I	Basic TOEIC Writing Basic Power Words Grammar (Basic)
Reading II	Standard TOEIC Writing Prepositions IT English Basic IT English Vocabulary

Class Title	e-Learning Courseware by ALC
Reading III	Standard TOEIC Writing Prepositions IT English Basic IT English Vocabulary
Listening	Standard Reading Writing Basic Power Words English Grammar
Writing I	Basic Reading Basic Listening Power Words Grammar

Appendix 2a

Number of volunteers

Class Title	No. of Volunteers
Oral Communication I	121
Oral Communication 2	7
Reading I	24
Reading II	36
Reading III	19
Listening	76
Writing I	60
Total	343*

Appendix 2b

Participation by class

Courseware Name	Access	Consistent 1	Consistent 2
Basic Listening	19	1	0
Basic Reading	10	1	0
Basic TOEIC	7	0	0
Grammar Drill	4	0	0
Grammar Lecture	2	0	0
Grammar Level Check	25	na	na
Grammar Main	18	3	1
IT English Basic	50	5	1
IT English Vocabulary	24	4	2
Standard Listening	40	7	1
Standard Reading	45	9	5
Standard Level Check	131	na	na
Standard TOEIC	10	3	2
Power Words	39	na	na
Level Check			
Power	29	7	0
Words Vocabulary			
Writing Basic	25	2	0
Writing Preposition	11	1	0
Access = Made an attempt to complete at least one unit			
Consistent 1 = worked consistently for a period of more than 3 months			
Consistent 2 = worked consistently for a period of more than 6 months			
na= because of placement test, figures not available			

Appendix 2c

Totals

No. of students taught by full-time teachers	1463
No. of students who signed up as volunteers	343
No. of students who accessed the courseware	489
No. of students who worked consistently for more than 3 months	43
No. of students who worked consistently for more than 6 months	12

*Numbers include students who were cross-registered.

Appendix 3

Pairings for 2006

1st year Students

Class Title	e-Learning Courseware by ALC
Reading I	Basic (TOEIC) Writing (Basic) Power Words
Essential English	Basic (Reading) Basic (Listening) Grammar (Basic)

2nd to 4th year Students

Class Title	e-Learning Courseware by ALC
Reading II	Standard (TOEIC) Writing (Prepositions) Grammar (Basic)
Reading III	Standard (TOEIC) Writing (Prepositions) IT English (Basic)
Listening I & Writing I	Standard (Reading) Writing (Basic) IT English (Basic)
English Communication I	Power Words IT English (Vocabulary) Standard (Listening)
English Communication 2	Grammar (Basic) IT English (Vocabulary) Standard (Listening)

Appendix 4

Student participation for 2006

(Class Title No. of students registered, No. of students received bonus points, Percentage)

Reading I	571	70	12%
Essential English	558	62	11%
Reading II	458	32	8%
Reading III	149	7	5%
Listening	403	29	7%
Writing	62	5	8%
English Communication I	249	26	10%
English Communication II	8	1	2%
Overall	2458*	236*	9.6%

Appendix 5

Questionnaire and responses

1. Did you try the e-Learning material?

Yes 358 (32.4%)

No 747 (67.6%)

For those who answered "Yes" to Question 1:

2. Which course did you try?

238 Listening (66.5%)

200 Reading (55.9%)

138 Grammar (38.5%)

163 TOEIC (45.5%)

156 Vocabulary (43.6%)

52 Technical English (14.5%)

3. When did you start?

308 (86%) before summer vacation

34 (9.5%) October

12 (3.4%) September

4. Did you work consistently throughout the year?
211 (58.9%) No
73 (20.4%) Yes
73 (20.4%) More or less so
5. On average, how much time did you spend on each lesson?
205 (57.3%) Less than 30 minutes
84 (23.5%) 30-45 minutes
38 (10.6%) 45-60 minutes
5. Where did you study?
301 (84.1%) At school
48 (13.4%) At home
6. Did you experience any problems logging on off campus?
185 (51.7%) Never made an attempt.
80 (22.3%) Yes
80 (22.3%) No
7. Was the number of CALL classrooms sufficient?
225 (62.8%) No
128 (35.8%) Yes
8. Were you able to complete the tasks and receive bonus points?
225 (62.8%) No
128 (35.8%) Yes
- 9a. Why did you give up? 9b. Why did you continue?
90 Hard to maintain motivation 91 Wanted bonus points
72 Takes too much time 34 For my own good
10. How would you evaluate the e-Learning material?
251 (70.1%) Pretty good
48 (13.4%) Not so good
30 (8.4%) Very good

For those who answered "No" to Question 1:

1. Why didn't you try the material?
454 (60.8%) No time
110 (14.7%) Bonus points too low
68 (9.1%) Dislike English
2. Under what circumstances would you?
442 (59.2%) If bonus points were 20-30%

265 (35.5%) If material became part of class
80 (10.7%) If students were tested

To all students:

Should e-Learning become an in-class activity?

585 (52.9%) No
386 (36.6%) Yes

Appendix 6

Pairings for 2007

1st Year Students

Class Title e-Learning Courseware by ALC

Reading I	Basic English (TOEIC Listening Course)
Writing I	Basic English (Reading Course)

2nd Year Students

Class Title e-Learning Courseware by ALC

Reading II	Standard (TOEIC Listening Course)
Reading III	Writing (Basic Course)
Listening	Technical English (Basic Course)
Writing II	Standard (Listening Course)
English Communication I	Power Words
English Communication II	English Grammar

Appendix 7

Hardware

	2005	2006	2007
No. of CALL classrooms	3	12	15
No. of computers	108	464	746